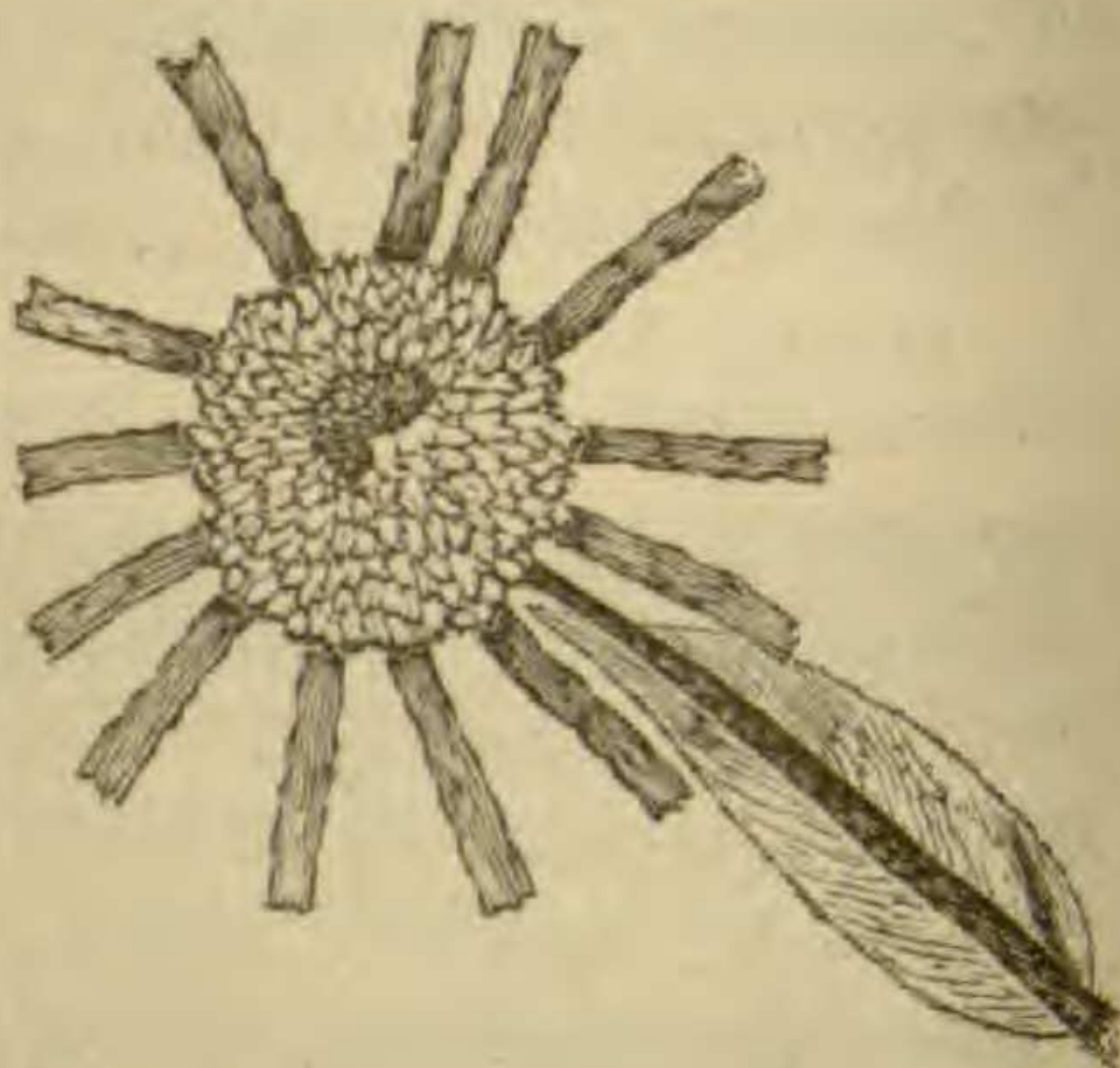


tained no injury, but swine were killed by them. It was the custom among some planters to throw the seed into the water during the rainy season, in such situations as became dry during the summer. Maceration for several months placed the seed in a condition to be used by swine as food, and during the dry season the seeds were eaten by them greedily without injury.—F. L. HARVEY, Fayetteville, Ark.

**Rudbeckia hirta, L.**—I collected July 28, 1882, in Shelburne, N. H., a specimen of *Rudbeckia hirta*, in which the tubular disk flowers were all changed to ligulate flowers, nearly twice their ordinary length. The ray flowers were as usual. The accompanying sketch illustrates the flower.—WALTER DEANE, Cambridge, Mass.



**Variation and Human Interference.**—DEAR EDITOR—I have this spring received from one source wild specimens of *Thalictrum anemonoides*, with full double flowers; from another, *Epigaea*, in the same condition. As these variations can not well be regarded as advantageous to the plants themselves, will you report the case to Dr. Sturtevant, who has made an acute suggestion about such things, and ask him if we are to infer that the aborigines of Maryland and New Hampshire were in former times floriculturists?—A. G.

**What a Lilac Bush did.**—Two cut stones forming a part of a corner foundation of Dr. Gray's residence at Cambridge have been misplaced by a lilac bush which some years since insinuated itself into a very close joint in the stone-work. The lower stone which has been misplaced is three feet long, about a foot high, and eight inches deep. Upon this rests a stone of similar shape, two feet long. These stones form one end of the wall. In the joint between the lower stone and the main body of the wall the lilac sprout established itself. The bush, now scarcely more than an inch in diameter, has forced the lower stone an inch away from the remaining wall in a horizontal direction. Moreover, the upper stone, being attached to the lower by mortar and being held down by the weight of the building, has shared equally in the displacement.—L. H. BAILEY, JR.

## EDITORIAL NOTES.

POLYEMBRYONY, arising probably from the formation of more than one germ cell in the embryo sac, has been noticed in *Trifolium pratense*.

MAXIME CORNU, the distinguished botanist, has recently been appointed *Professeur de culture* to the Jardin des Plantes at Paris, as successor to the late M. Decaisne.



A STRONG popular interest is manifested in England in the scientific results of the study of the diseases of cultivated plants.

PROF. W. W. BAILEY, of Brown University, reports finding a raceme of *Cytisus Canariensis*, a common hot-house plant, terminated by a well-marked leafy branch.

IN MR. L. H. BAILEY'S supplement to his catalogue of N. Am. Carices several additions and emendations are made, making the whole number of species catalogued 200, varieties 85.

"THE BOTANISTS of this country need arousing, they are far behind their zoological brethren," says a cotemporary. This is lamentably true, but not to the extent that the page devoted to the subject in *Science Record* would lead one to believe.

THE NOTABLE botanists from across the Atlantic who may be quite confidently expected to attend the American Association at Philadelphia are, so far as now known, Sir Joseph Hooker, Prof. W. R. McNab, Mr. John Ball and Sir J. Lubbock.

THE PREPARATIONS for the entertainment of botanists at the Philadelphia meeting are steadily progressing. Among the special excursions decided upon is one to the Bartram house and garden at Kinsessing, and another to the pine barrens of New Jersey.

PULVERIZED PLANTS dissolved in distilled water have been used recently in some experiments in plant physiology. It is suggested that the solution will probably prove useful in many cases where it is desired to determine the amount and quality of plant food.

WARMING OPPOSES LUDWIG'S THEORY that *Philodendron bipinnatifidum* is fertilized by snails (BOT. GAZ. viii, 230), and considers that it is effected by "small black bees." During the flowering of this Aroid a rise of temperature to the extent of  $18.5^{\circ}$  C. takes place.

BY STUDYING THEIR DEVELOPMENT, Urban has concluded that the axillary spines of the *Aurantiaceæ* are the metamorphosed lowermost leaves of a theoretical axillary shoot. This explanation is confirmed by finding intermediate forms in some species of *Citrus*.

REV. FRANCIS WOLLE'S new work on the *Desmids of the United States* will contain fifty-three colored plates, and descriptions of nearly five hundred species. It is published at the very low price of five dollars; subscriptions should be sent to the author at Bethlehem, Pa.

THE COLORS of the various parts of plants is not always due to the presence of pigments in the cell-sap. The dark violet-blue of the roots of *Pontederia cordata* is owing to the color of the cell-wall itself. The pigment of the bright red roots of *Wachendorfia thyrsiflora*, though diffused in the cell-sap, is formed even in absolute darkness. The bright red of the fruit of *Rivina humilis* and the bracts of *Euphorbia fulgens* is produced by the superposition of cells having different pigments.



L. W. RUSSELL records in Random Notes a specimen of *Sassafras officinale* having the following dimensions: Circumference at the ground, 14 ft., 3 in.; 2 ft. up, 11 ft., 10.5 in., holding its size with little diminution to the first limbs, 11 ft. up. The height of the tree computed from its shadow was 49.5 ft.

BUSGEN HAS REPEATED Darwin's experiments made some years ago on *Drosera rotundifolia*, and has obtained even more decisive results. From three to five times as many pods were produced on those plants whose leaves were fed with insects as on those unfed, though the latter had an abundance of nutriment about the roots.

PROFS. COULTER AND BARNES are engaged in a special study of the North American species of the genus *Cyperus*. Any specimens that they can beg, borrow or buy will be thankfully received. Loaned specimens will be retained for as short a time as possible and carefully returned. Any assistance rendered will be fully acknowledged.

THERE HAS BEEN a sharp conflict in England between theory and practice, in regard to the question whether the spores of *Peronospora infestans* can filter through five inches of soil and infect uninjured potatoes with the rot, or not. We sincerely hope that the puerile and undignified tone of the controversy will not be adopted by botanists on this side of the Atlantic.

THE RESULT of experiments with 21,000 specimens of *Mercurialis annua* and 6,000 of *Cannabis sativa* show that external influences have little or no influence on the production of seedlings of one or the other sex in these dioecious species. In the former species the number of male flowers was greater and in the second species less than the number of female flowers. Similar experiments with monoecious plants gave similar results.

A CAREFUL STUDY of the differences between the aerial and subterranean parts of the same stems has revealed the fact that the differences are to be attributed to environment rather than to hereditary tendencies. The chief differences are in the greater development of the protecting tissues; the reduction or disappearance of collenchyma, liber-fibers, etc.; great development of cortex and reduction of pith, and feeble lignification.

CYPERACEÆ, Pollen Grains, and Vegetable Monstrosities are botanical subjects lately presented before societies; the first by the Rev. E. J. Hill, with herbarium and microscope illustrations, before the State Mic. Soc. of Ill., the second by Mr. Joseph F. James, with lantern illustrations, before the Cincinnati Soc. of Nat. Hist., and the last by Dr. G. L. Goodale, with illustrations from the Cambridge Botanic Garden, before the Boston Soc. of Nat. Hist.

"THE MILK IN THE COCOANUT" is the title of a racy paper by Grant Allen, reprinted in the May *Popular Science Monthly* from *Cornhill Magazine*. In a charming popular way he explains not only the existence of the milk, but also the significance of the three scars and the triangular shape of the fruit. The latter he supposes indicative of liliaceous ancestry, which may be true and may be not. Like all his deductions, however, it is well worth reading.